

LEADING

TEACHING

CARING



The UNC Comprehensive Stroke Center's Guide to Stroke

An overview of stroke for patients and caregivers.



Welcome to the UNC Health Care Center Comprehensive Stroke Center

The UNC Comprehensive Stroke Center is committed to giving patient-centered care to the people of North Carolina. Our goal is to promote health in the community through stroke teaching and prevention. Our mission is to assist you with living well after your stroke.

About this book

This book was designed with input from patients, caregivers and stroke center staff. It is meant to be a guide for both the patient and caregiver. It will review the basics of diagnosis, treatment, and rehabilitation.

Using this book

This book is a tool that will be used through your hospital stay and beyond. Please keep available at all times. An electronic version is available at www.uncstroke.org.

Throughout this book, you will see green boxes like this one:



Use these boxes to fill in key pieces of information about your diagnosis and care. This is information you may need when you leave the hospital.



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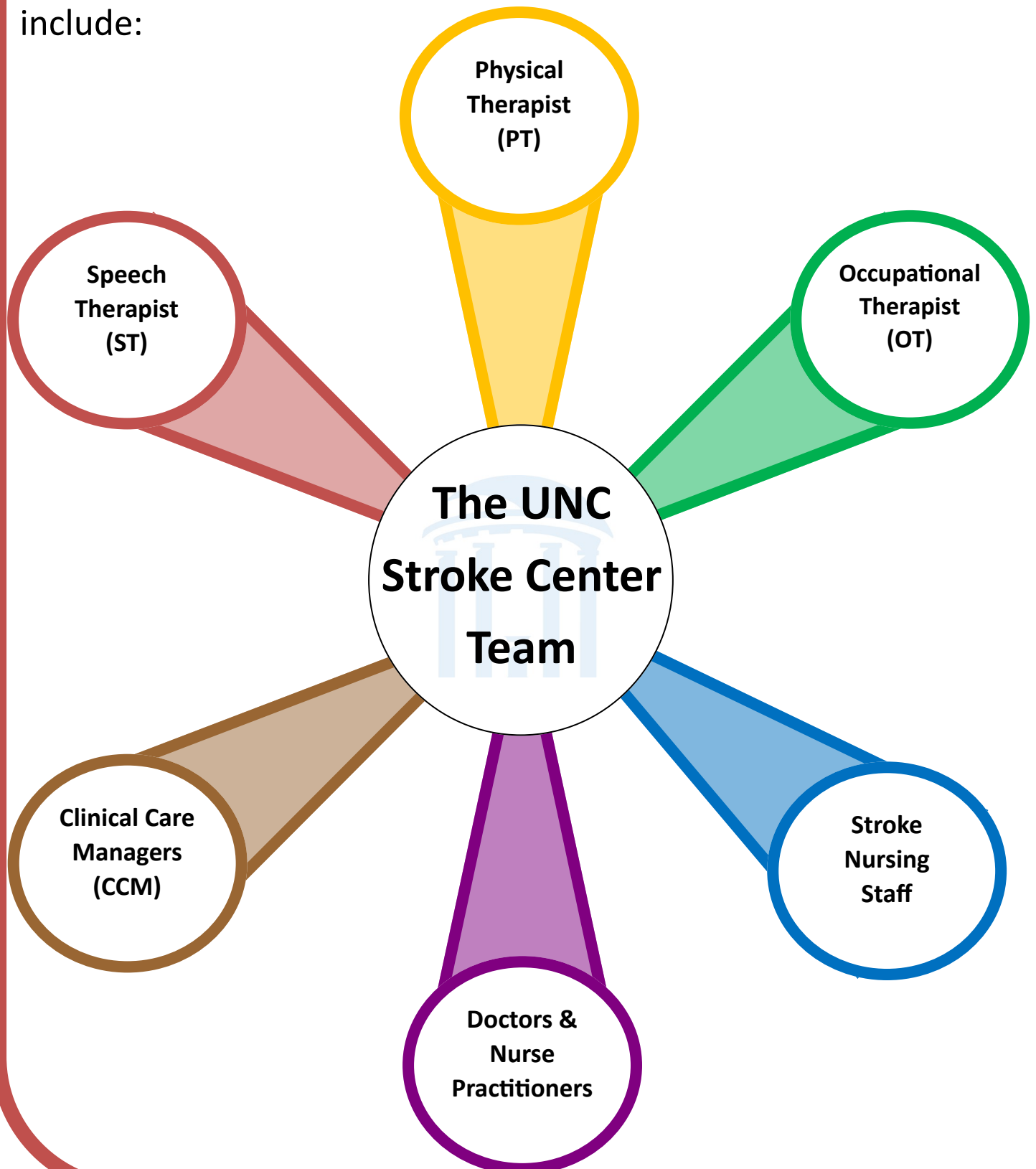
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People You Will Meet....

There are many members of your team that will work with you on reaching your goals. The main members of your team will include:



...And Places You May Go

There are a few areas where you may be cared for. This usually depends on the level of care that you will need. It also may depend on which tests and procedures that you may need to have. These places may include:



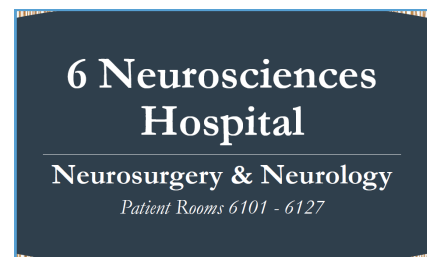
Emergency Department



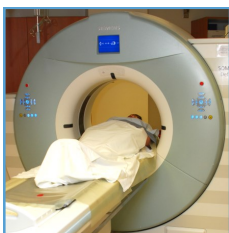
Intensive Care Unit



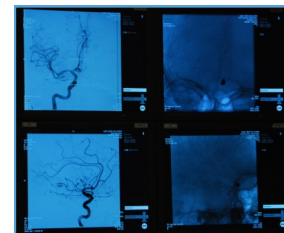
Intermediate Care Unit



Acute Care Unit



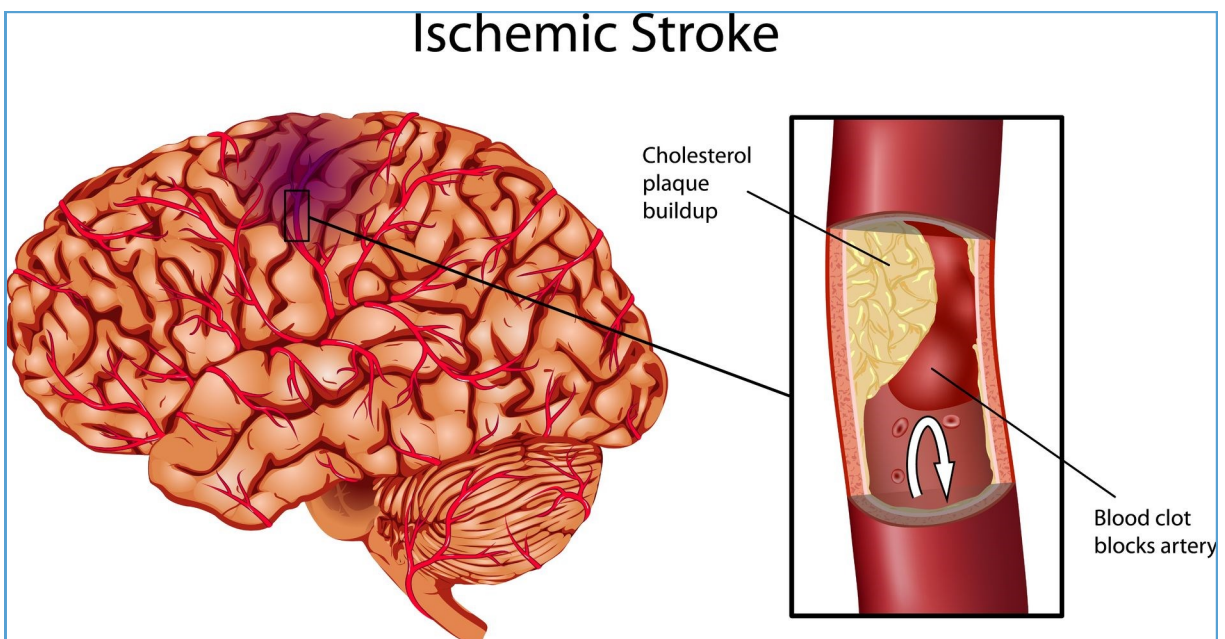
Procedural & Diagnostic Areas



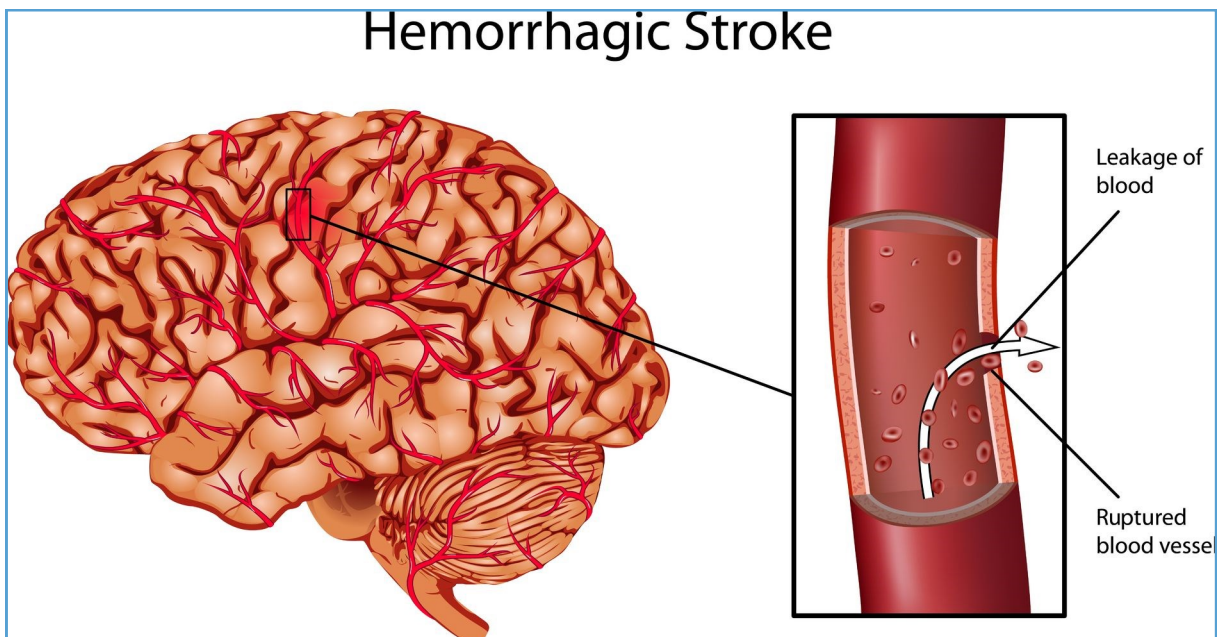
Stroke Overview

- A stroke is also called a brain attack.
- A stroke happens when blood supply is cut off to an area of the brain.
- When blood supply is cut off, it causes brain cells to lose oxygen and die.
- The symptoms that you see with a stroke depend on the area of the brain that is damaged.
- There are two types of stroke: Ischemic and Hemorrhagic.

Ischemic Stroke



Hemorrhagic Stroke



Types of Stroke

Ischemic Stroke

- This happens when a blood vessel is clogged or blocked.
- 80% of strokes are ischemic.

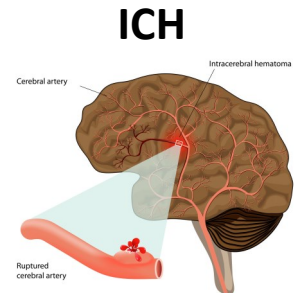
Transient Ischemic Attack (TIA)

- Also called a 'mini stroke'.
- In a TIA, the blockage is temporary. It does not cause permanent brain damage.
- While it is not a stroke, a TIA is an important **warning sign** that you are at risk for a stroke in the future.

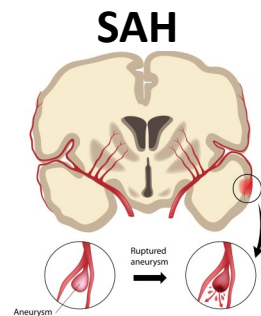
Hemorrhagic Stroke

- This happens when a blood vessel bursts or ruptures. This causes blood to leak out.
- 20% of strokes are hemorrhagic.
- There are two kinds of hemorrhagic stroke, **Intracerebral Hemorrhage (ICH)** and **Subarachnoid Hemorrhage (SAH)**:

In an **ICH**, blood leaks into the brain tissue. It is most often caused by high blood pressure.



In a **SAH**, blood leaks in between the layers around the brain called the subarachnoid space. It is most often caused by a burst aneurysm.

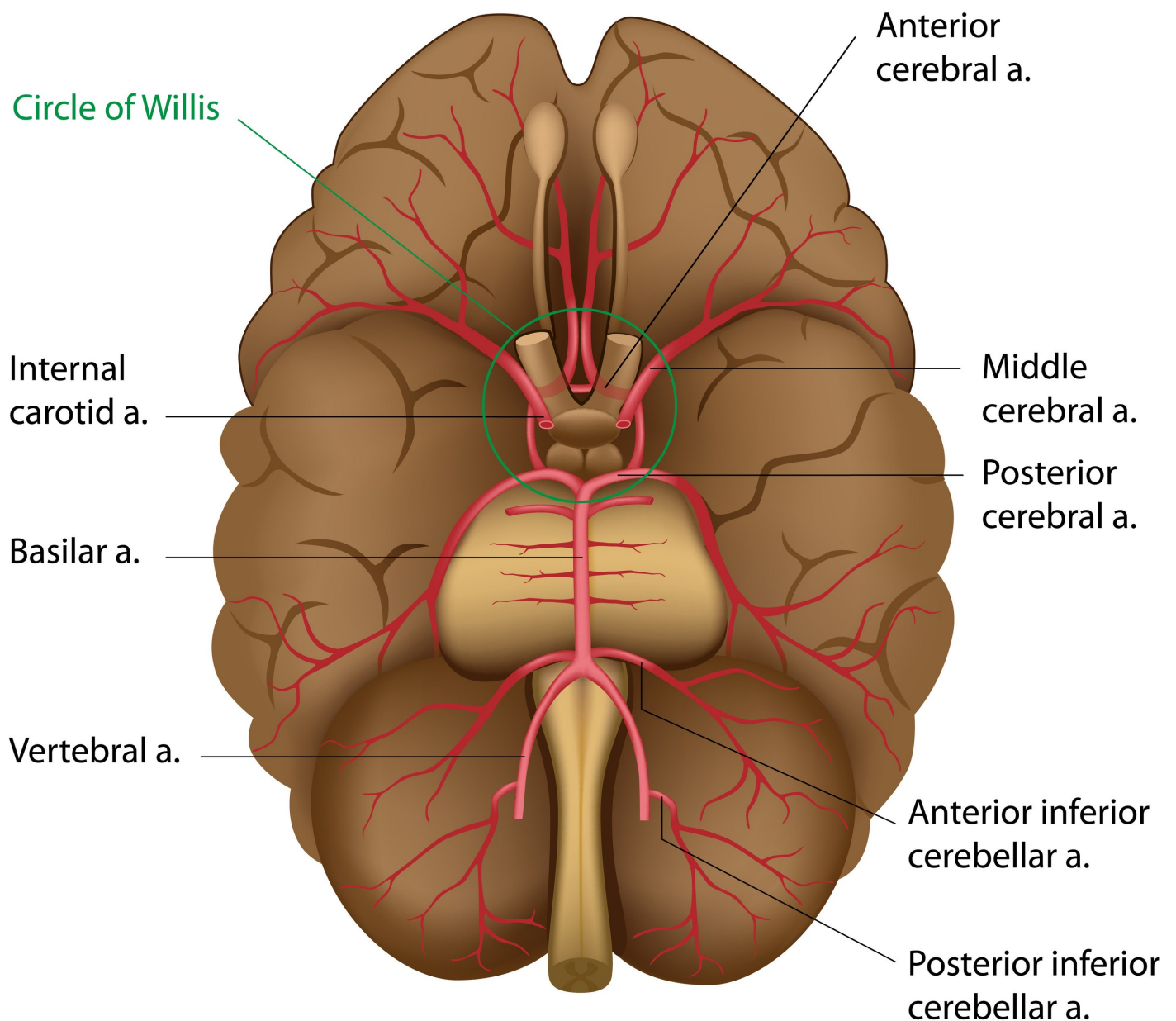


The type of stroke I had was:

Where Was My Stroke?



Blood Supply of the Brain



What part of my brain did my stroke affect?



Right Brain

- Feels and moves left side of body
- Controls emotions
- Organizes
- Keeps track of time
- Pays attention to the left side of space

Left Brain

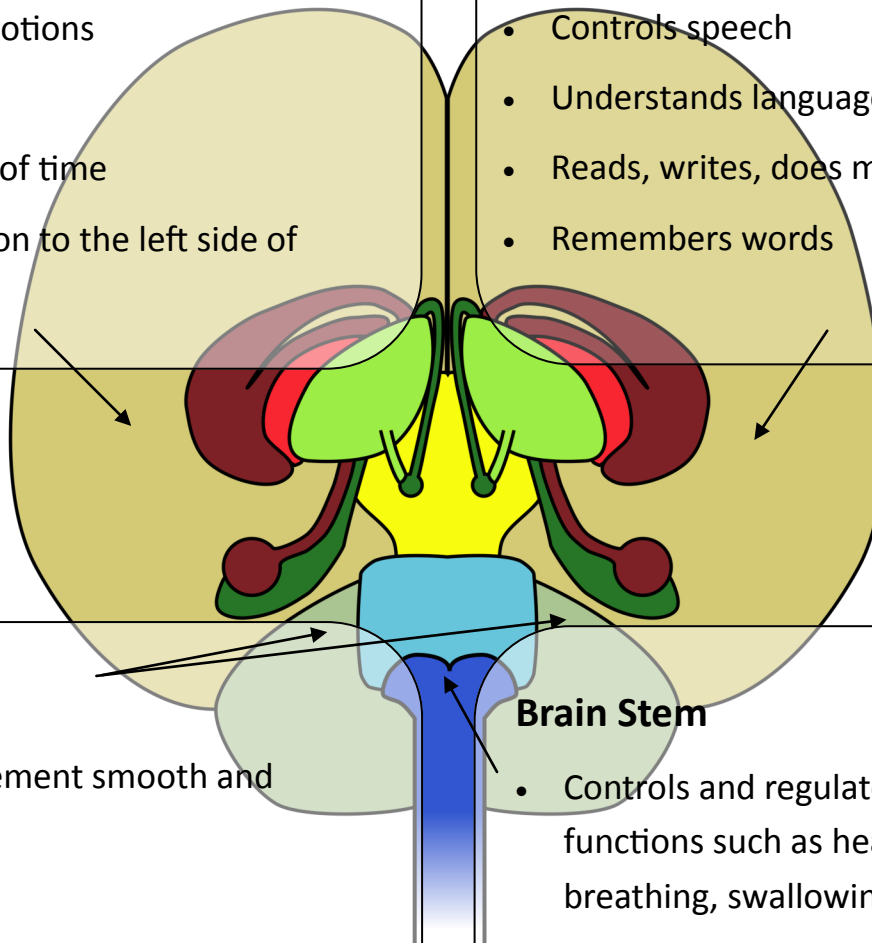
- Feels and moves right side of body
- Controls speech
- Understands language
- Reads, writes, does math
- Remembers words

Cerebellum

- Keeps movement smooth and balanced

Brain Stem

- Controls and regulates basic body functions such as heartbeat, breathing, swallowing and blinking
- Controls alertness
- Focuses attention



Why Did I Have a Stroke?

- In some cases, there may not be a clear reason why you had a stroke.
- In most cases, though, we can identify at least one risk factor for stroke. A risk factor is something that puts you at higher risk of having a stroke.
- Risk factors can be divided into two types:
 - Modifiable Risk Factor: Something that can be changed or treated.
 - Non-Modifiable Risk Factor: Something that cannot be changed or treated.
- Some examples of the most common risk factors are below:

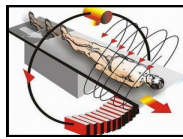
Modifiable Risk Factors	Non-Modifiable Risk Factors
High Blood Pressure	Increasing age
Tobacco use/exposure	Gender
Diabetes	Heredity and race
High cholesterol	History of a prior stroke
Physical inactivity	Abnormalities of blood vessels (example: aneurysm, AVM)
Obesity	
Carotid or other artery diseases	
Transient Ischemic Attack(s) (TIAs)	
Atrial fibrillation (afib) or other heart disease	
Certain blood disorders (example: Sickle Cell Anemia)	
Excessive alcohol intake	
Illegal drug use	

Diagnostic Tests

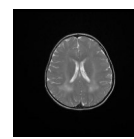
You may have many tests while you are in the hospital. These tests may be done for many different reasons. Below are some examples of the most common tests that might be done for both ischemic stroke and hemorrhagic stroke. More information on specific tests is in the glossary of this book.

Here are some examples of tests that may be done to tell us what kind of stroke you had:

Computed Tomography (CT) Scan

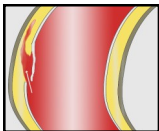


Magnetic Resonance Imaging (MRI)

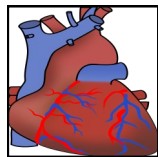


Here are some examples of tests that may be done to give us more information on the kind of stroke or help us tell why you had a stroke:

Carotid Doppler



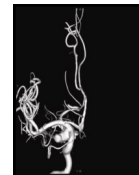
Echocardiogram



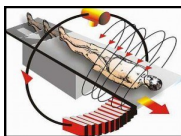
Cardiac Monitoring



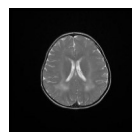
Cerebral Angiogram



CT Angiogram (CTA)



**MRI Angiogram (MRA) or
Venogram (MRV)**



Blood Tests

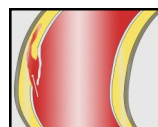


Here are some examples of tests that may be done to monitor for other conditions:

Electroencephalogram (EEG)



**Peripheral or Transcranial
Doppler**



Blood Tests



Treatment for Ischemic Stroke

Overview:

- After an ischemic stroke, measures will be taken to make sure your vital signs are stable.
- Your care team will closely assess your neurologic status throughout your stay. This includes tests of your strength, language, understanding, sensation and reflexes.
- You will also be closely monitored for signs of increased pressure on the brain. These signs include restlessness, confusion, trouble following commands and headache.
- During your hospital stay, your care team will work to identify and treat your modifiable risk factors. This may include medications and education on lifestyle changes. This will help to prevent a stroke in the future.

Will surgery be needed for my stroke?

- In most cases, surgery will not be needed for an ischemic stroke.
- If you have serious blockage in one or both carotid arteries in your neck, you may need surgery to correct this. During this surgery, a surgeon removes plaque buildup in the carotid arteries.
- If serious, life-threatening brain swelling happens as a result of the stroke, your care team may discuss the possibility of a surgical procedure called a Decompressive Craniectomy to relieve brain pressure.



Treatment for Hemorrhagic Stroke

Overview:

- After a hemorrhagic stroke, measures will be taken to make sure that your vital signs are stable.
- You may be given medications to control your blood pressure. To start with, these are usually given through an IV.
- You may be given medications or transfusion of blood products to help with blood clotting. These are given through an IV.
- Your care team will closely assess your neurologic status throughout your stay. This includes tests of your strength, language, understanding, sensation and reflexes.
- You will also be closely monitored for signs of increased pressure on the brain. These signs include restlessness, confusion, trouble following commands and headache.

Will surgery be needed for my stroke?

- In some cases, surgery may be needed to drain or remove blood that is in or around the brain.
- If an aneurysm is the cause of the stroke, a procedure may be done to prevent bleeding from happening again. This procedure may be a coiling or a clipping. A coiling procedure fills the aneurysm with soft metal coils or mesh to block it off and stop or prevent bleeding. A clipping procedure places a small metal clip around the base of the aneurysm to stop or prevent bleeding.
- If an abnormality of your blood vessel such as an Arteriovenous Malformation (AVM) is found, surgery may be needed to stop or prevent bleeding.
- If serious, life-threatening brain swelling happens as a result of the stroke, your care team may discuss the possibility of a surgical procedure called a Decompressive Craniectomy to relieve brain pressure.

Stroke Treatment: Rehabilitation

Rehabilitation after a stroke starts as soon as possible. You will meet many different specialists along the way. Rehabilitation may include **Physiatrists as well as Physical, Occupational, and Speech Therapists:**

Physical Therapist (PT): The physical therapist will help you move, reduce pain, restore function, and prevent further disability. Your individualized treatment plan may include training to help you walk or use a wheelchair and work on balance. You also will learn how to safely move from one position to another.



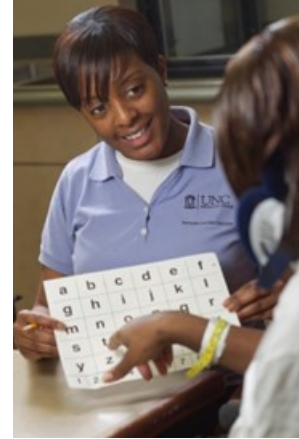
Occupational Therapist (OT): The occupational therapist will help you regain independence with Activities of Daily Living (ADLs). These are the things you do every day to take care of yourself -- bathing, grooming, dressing, feeding and preparing meals. Your OT will guide you through various exercises to improve your ADLs after stroke. They may also recommend adaptive equipment that might help you when you go home or into your community.



My goals for therapy are:

Stroke Treatment: Rehabilitation

Speech Language Pathologist (ST): The speech therapist (also known as speech language pathologist) will help you improve speech, language (expression, comprehension, reading and writing), cognition (thinking skills) and swallowing skills. The ST may also train you and your family on strategies to improve these skills in your home, work, and community.



Physiatrist: A physiatrist is a physician who specializes in physical medicine & rehabilitation. In the Stroke Rehabilitation program, the physiatrist is involved with the evaluation and treatment of patients who have had a stroke. At the start of treatment, they work with each patient and his or her family to identify the patient's medical needs and determine treatment goals.

Care Manager: Your care manager will assist you and your family in identifying if there are any barriers to your care after discharge. Your care manager can suggest helpful resources that you may need when you leave the hospital. He or she will become involved with your care from the beginning of your stay by coordinating trainings, care conferences and communication with agencies. The care manager may work with your insurance company, payer source and/or other providers to meet your specific needs for discharge.

What Can I Do to Prevent a Stroke in the Future?

- Knowing your risk factors for stroke is the first step in preventing another stroke from happening.
- After discharge, having regular checkups with a primary care doctor is also important as your risk factors may change over time.
- During your hospital stay, your care team will focus on your modifiable risk factors and work with you on a plan to change them. This may include:

High Blood Pressure

High blood pressure can cause damage to your arteries and organs over time. High blood pressure is the most common cause of stroke.

Managing high blood pressure can reduce your risk of stroke. This may involve a combination of medications, a healthy diet and regular physical activity.

Healthy Eating

Healthy eating can help reduce your risk of having a stroke. A healthy diet includes foods that are low in saturated fat, trans fat, sodium and added sugars. Some tips on changing your eating habits include:

- Ask a doctor, nurse or licensed nutritionist/registered dietitian for help.
- Avoid foods like fatty meats (fatty beef, poultry with skin, fried meats), butter and cream which are high in saturated fats.
- Eat moderate amounts of food and cut down on saturated fat, trans fat, sugar and salt. Eat more fruit, vegetables, whole-grains, dried peas and beans, pasta, fish, poultry and lean meats.
- Bake, broil, roast and boil foods instead of frying.
- Read nutrition labels on packaged meals. Many are very high in sodium.



The ways I can prevent a stroke in the future are:

Diabetes

High blood sugar is a risk factor for stroke. Managing your blood sugar may include a combination of medications, healthy diet and regular physical activity.

Regular Physical Activity

Being inactive, overweight, or both can increase your risk of stroke. As little as 30 minutes of regular physical activity per day can help to lower blood pressure, blood cholesterol and blood sugar. Check with your doctor before beginning an exercise program. If you have mobility limitations, your physical therapist can help you with an exercise program that meets your needs.

Cholesterol

High cholesterol can increase the risk of blockages in your arteries. If an artery in your brain becomes blocked, it can cause a stroke. Managing high cholesterol can reduce your risk of stroke. This may involve a combination of medications, a healthy diet and regular physical activity.

Tobacco

Tobacco use and second-hand smoke damages blood vessels. This can lead to blockages within the blood vessels which can cause a stroke. Not smoking and avoiding second-hand smoke is the best way to prevent this damage. If you use tobacco or have exposure to second-hand smoke, you can work with your healthcare team on a plan to stop. This plan may involve a combination of lifestyle changes, counseling and medications.

Alcohol & Substance Abuse

Illegal drug use is a common cause for stroke. IV drug use is associated with a high stroke risk and cocaine use is also linked to stroke. More than two alcoholic drinks per day for a man and more than one per day for a woman can raise blood pressure. Binge drinking can also lead to stroke. Management of excessive alcohol use and/or substance abuse may involve a combination of community resources and programs, lifestyle changes and counseling.

What Medications Will I Need?

You may be asked to start some new medications to prevent a stroke from happening again. The kinds of medications that you will be started on after your stroke usually depends on a few different things

- What type of stroke did you have?
- What are your stroke risk factors?
- Do you have any allergies or reasons why you can't take certain medications?

Your care team will work with you on an individualized medication plan. Some of the medications that may be in that plan include:

Antiplatelet Medications

These can help keep blood clots from forming. They are usually used for patients with ischemic stroke or TIA. Examples of antiplatelet medications include aspirin and clopidogrel (Plavix®).

Anticoagulant Medications

These may also be called 'blood thinners'. Anticoagulant medications make it harder for the clots to form in your body. They are usually used for patients who have a heart condition like atrial fibrillation or atrial flutter. Examples of medications include warfarin (Coumadin®), rivaroxaban (Xarelto®), apixaban (Eliquis®) and dabigatran (Pradaxa®).



The medication(s) that I will need:

Statin Medications

These are used to lower your blood cholesterol. They work by preventing cholesterol from forming. High cholesterol can increase the risk of blockages in your arteries. If an artery is blocked in your brain, it can cause a stroke. Some examples of statin medications include: atorvastatin (Lipitor®), pravastatin (Pravachol®), rosuvastatin calcium (Crestor®) and simvastatin (Zocor®)

Blood Pressure Lowering Medications

These may also be called 'antihypertensive' medications. High blood pressure can cause damage to your arteries and organs over time. High blood pressure is the most common cause of stroke. Blood pressure lowering medications are divided into classes based on how they work. These classes include: diuretics, angiotensin-converting enzyme (ACE) inhibitors, angiotensin II receptor blockers, vasodilators, alpha blockers, beta-blockers, calcium channel blockers and central agonists. In some patients, more than one class of blood-pressure lowering medication may be needed.

Tobacco Medications

These medications may be used to help you with quitting tobacco use. These may include nicotine replacement therapy or smoking cessation medications. Nicotine replacement therapy contains a small amount of nicotine and may be helpful with cutting down cravings and ease symptoms of withdrawal. Smoking cessation medications do not contain nicotine and can also help with tobacco cravings and withdrawal symptoms.

Changes after a Stroke: Information for Patients

After a stroke, you may notice changes in your mood, personality and ability to cope. These changes include:

Depression

- Feelings of anger, frustration, fear sadness and anxiety are common after a stroke.
- The sudden nature of stroke can have a life-changing impact that can lead to Post-Stroke Depression (PSD). Depression causes feelings of sadness and loss of interest.
- PSD is common. It affects more than 1/3 of stroke survivors.
- PSD can set in days, weeks, months or even years after your stroke. It can impact your quality of life and recovery.
- Know the signs of depression and seek help soon after you note symptoms. Signs include difficulty concentrating, feelings of being sad or empty, fatigue, decreased energy, feelings of hopelessness, not sleeping or sleeping too much, irritability, eating too much or not enough.
- Treatment for PSD may include a combination of medications, therapy and counseling.
- Notify your care provider if you have concerns about PSD.



Call 9-1-1 if you have feelings of hurting yourself or others.

Affect

- Affect is how emotions are reflected through facial expressions.
- Affect can be a result of both depression and/or the injury to your brain from the stroke.
- Some patients may experience a flat affect. You may notice reduced ability to express emotions. Be open with others about your affect so they know what to expect. Treatment may include management of depression and/or therapy.
- Some patients may experience a Pseudobulbar Affect (PBA). With PBA, you may notice uncontrollable outbursts of emotions such as laughing or crying. When you feel an episode coming on, try to distract yourself. During an episode, do your best to relax yourself. Explain PBA to those close to you so they know how best to help.
- Notify your primary care provider if you have concerns about your affect.

Anxiety

- Feelings of anxiety are common after a stroke. You may notice: worry, fear, restlessness, irritability, low energy, poor concentration, muscle tension, rapid heartbeat, shaking, headache and feelings of being sick to your stomach.
- Tips for coping with anxiety include: make the most out of rehab and therapy, spend time with loved ones, stay active and do things you enjoy, set goals and plan daily activities.
- Notify your primary care provider if you have concerns about anxiety. Treatment may include counseling, medication or both.



Changes after a Stroke: Information for Caregivers

- As a caregiver, you may notice changes in your mood, personality and ability to cope. It is important to take care of yourself. A happy and healthy caregiver is able to provide the best care for their loved one.
- Changes that you may notice in yourself include:

Depression

- Caring for a stroke survivor can be a heavy burden. Anger, frustration, fear and sadness are all normal feelings for caregivers.
- It is important to know that caregivers are also at a high risk for depression.
- Know the signs of depression and seek help soon after you note symptoms. Signs include difficulty concentrating, feelings of being sad or empty, fatigue, decreased energy, feelings of hopelessness, not sleeping or sleeping too much, irritability, eating too much or not enough.
- Notify your primary care doctor if you have concerns about depression.



Call 9-1-1 if you have feelings of hurting yourself or others.

Caregiver Fatigue

- Stroke survivors may require 24-hour a day, 7 day a week care. This can lead to caregivers experiencing high amounts of stress, anxiety, lack of sleep and depression.
- Being a caregiver can be physically and emotionally demanding. Your responsibilities may include emotional support, managing finances, coordinating care and appointments, and maintaining a household. This can lead to feelings of fatigue in your role, known as Caregiver Fatigue.
- If you will be a primary caregiver for your loved one, you need to build periods of rest (called respite) into your day. Resources for respite may include other loved ones, friends and resources in your local community.
- Support groups may also be helpful to decrease caregiver fatigue.
- Before discharge from the hospital, speak with a care manager or social worker. They can help with finding resources for respite in your community.





What Questions Should I Ask?

What kind of stroke did I have?

Do you know why I had a stroke?

Are there things that I can do to prevent another stroke from happening in the future?

What is my plan for follow-up after leaving the hospital

- When should I see my primary care doctor? _____
- When should I see a neurologist or neurosurgeon? _____
- Are there any other doctors I will need to see? _____
- Do I need therapy? _____

What new medications will I be on? How often should I take them?

Phone Numbers to Know:

- UNC Neurology Clinic 984-974-4401 or 984-974-2266
- UNC Neurosurgery Clinic 919-843-4609
- Center for Rehabilitation Therapies 984-974-9700
- Stroke Nurse Practitioner 919-843-2387
- My Primary Care Physician: _____



Safety at Home

If you are going home after your stroke, it is important to make sure your home is safe. Falls are common among stroke survivors and can lead to injury. Here are some tips to make sure your home is safe:

- Have furniture moved so there is a clear path through the room.
- Remove or secure throw rugs on the floor. You can secure with double-sided tape or nonslip backing.
- Keep objects off of the floor and stairways.
- Coil or tape wires next to the wall so you can't trip over them. An electrician may be helpful to install new power outlets so cords are not stretched or laying on floors
- Fix loose, broken or uneven steps.
- Make sure you have plenty of lighting. Replace any burned-out lightbulbs. An electrician may be helpful to install overhead lighting if you need more light.
- Fix any loose handrails on stairways
- Move items in your cabinets to lower shelves to avoid reaching if balance is an issue for you.
- Before you drive after your stroke, ask your doctor if it is okay
- Ask your doctor about any lifting or weight restrictions, especially if you have an aneurysm.

Support Groups

There are a few local stroke support groups that are available through UNC:

The UNC Stroke Support Group (Chapel Hill)

- When: Meets the second Wednesday of every month at 1:00pm
- Where: The Center for Rehabilitation Care (1807 Fordham Blvd Chapel Hill)

Sanford/Lee County Stroke Support Group

- When: Meets the 2nd Thursday of every month at 1:00pm
- Where: Lee County Enrichment Center (1615 S. 3rd St. Sanford)

If you are not local, ask your care manager or social worker about a support group near you.



Resources

Throughout your journey, you may find yourself looking for resources. Here are some reliable websites that you go to for more information & support:

UNC Comprehensive Stroke Center

uncstroke.org

The UNC Stroke Center's website offers resources to patients and caregivers as well as contact information for appointments. An electronic version of this book is also available here. Link to our Facebook page offers tips for stroke prevention and healthy living after a stroke.

American Heart/American Stroke Association

strokeassociation.org 1-888-4-STROKE

The American Stroke Association serves consumers (stroke survivors, caregivers, family and friends of those affected by stroke), healthcare professionals, organizations, hospitals and all Americans interested in receiving information about stroke. A listing of support groups is also available.

National Stroke Association

stroke.org

The National Stroke Association provides stroke education and programs to stroke survivors, caregivers, and healthcare professionals. A listing of support groups is also available.

Caregiver Action Network

caregiveraction.org

The Caregiver Action Network is a non-profit organization providing education, peer support, and resources to family caregivers across the country free of charge.

Family Caregiver Alliance

caregiver.org

A nonprofit organization that addresses the needs of families and friends providing long-term care for loved ones at home.

National Council on Aging

ncoa.org

Service those aged 60+ and partner with nonprofit organizations, government, and business to provide innovative community programs and services, online help, and advocacy.

National Rehabilitation Information Center

naric.com

A page dedicated to disability- and rehabilitation-oriented information and organized in a variety of formats designed to make it easy for users to find and use.

QuitlineNC

quitlinenc.com 1-800-QUIT-NOW (1-800-784-8669)

QuitlineNC provides free cessation services to any North Carolina resident who needs help quitting tobacco use. Quit Coaching is available in different forms, which can be used separately or together, to help any tobacco user give up tobacco.

What to Know Before You Go

RED Zone -> Call 9-1-1 For New Signs of Stroke. Time is Brain.

Face—does it look uneven?

Arm—is one arm or leg weak ?

Speech—does it sound strange (slurred or hard to get out words?)

Time—time is brain, time to call 9-1-1

Sudden onset of difficulty with balance, vision changes or sudden severe headache with no known cause are also symptoms of stroke. Call 9-1-1 immediately

YELLOW Zone -> Call Your Doctor if you Have:

- Temperature over 101°F, chills, redness, tenderness or signs of infection
- Persistent nausea and/or vomiting or muscle cramps
- Severe uncontrolled pain
- Questions about your medication(s), side effects or you are thinking about stopping your medication(s)
- You have new symptoms related to your stroke, such as falls or trouble swallowing
- You have questions or concerns about test results
- You have questions or concerns about your blood pressure

GREEN Zone -> Follow Up & Action Plan in Place

- Active My UNC Chart account for test results, information and communication with health care team (myuncchart.org)
- Primary Doctor Appointment:
- Neurology/Neurosurgery Appointment:
- Therapy Appointments:
- Stroke Prevention Plan:
- My Lifestyle Changes:
- My New Medication Prescriptions:



Terms You Can Use

Adaptive devices	Equipment to help a patient safely and efficiently perform everyday tasks.
ADL	Activities of daily living-bathing, grooming ,etc.
Affected side	The side of the body that is impaired by the stroke.
Angiotensin Receptor blockers- High Blood Pressure medicine: Cozaar, Hyzaar, Benicar	It blocks the action of a hormone that causes the blood vessels to narrow. It causes the blood vessels to relax and open up which reduces the blood pressure. Also these drugs increase the release of salt and water into the urine.
Aphasia	Inability to use or understand language (spoken or written).
Arteriovenous malformation (AVM)	A tangle of blood vessels which has direct connection between arteries and veins.
Aspiration Pneumonia	A lung infection caused by inhaling food or drink into the lungs.
Aspiration	Inhaling food or drink into the lungs, it may cause coughing or choking.
Atrial Fibrillation	The rapid twitching of the atrium of the heart.
Beta blockers (Atenolol, Propanolol, Metoprolol)	It lowers the heart rate, the amount of blood the heart pumps out and force of the heartbeat, all which lowers the blood pressure.
Body mechanics	Performing daily activities using correct body form, positioning and movement.
Bowel Incontinence	Not being able to control when you have a bowel movement.
Calcium Channel Blockers –High Blood Pressure Medication (Cardizem, Amlodipine, Nifedipine)	It relaxes and widens the blood vessels, making it easier for the blood to flow through the vessels which lowers the blood pressure.
Cardiac Telemetry	Telemetry records the electrical activity of your heart. Many people have irregular heartbeats (arrhythmias) from time to time. What this means depends on the type of pattern they produce, how often they occur, how long they last and whether they occur at the same time you have symptoms.

Terms You Can Use

Carotid Doppler	A Doppler ultrasound test to see how blood flows through the carotid arteries. It will show buildup of fatty deposits (plaques) and blood flow in your arteries.
Catheter	Thin tube inserted into your bladder to drain your urine.
Cerebral Angiogram	An angiogram of the head and neck is an x-ray test that takes a picture of the blood vessels of the head and neck. It can be used to diagnose abnormalities like aneurysm or AVM as well as vessels that are narrow or blocked.
Cerebral Embolism	A blood clot that travels from your body to block a blood vessel in the brain.
Cerebral Thrombosis	A clot or blockage forms in a blood vessel of the brain.
Cognition/cognitive	A group of mental processes that includes attention, memory, reasoning, problem solving, language, learning and decision making.
Constipation	Difficulty having a bowel movement.
Contracture	The permanent tightening of muscles, skin and soft tissue at a joint.
CT Angiogram	Is more precise x-ray to evaluate blood vessels. Dye is injected into the blood stream and produces images of blood vessels.
CT Scan	A CT scan uses x-rays to make pictures of the head. A CT scan will show if blood is present in the brain.
Decompressive Craniectomy	A surgery that removes a piece of the skull to relieve brain pressure.
Deep vein thrombosis (DVT)	A blood clot that forms in a vein usually the calf or thigh.
Deficit	Refers to an ability that is lost or impaired after a stroke.
Diuretics High Blood Pressure medicine: Lasix, Hydrochlorothiazide	Causes the kidneys to remove more salt and water from the body, which helps relax the blood vessel walls, lowering the blood pressure.

Terms You Can Use

Doppler Ultrasound	A test that assess the blood flow through major arteries and veins. The test can also find blood clots in leg veins (DVT) that could break off and block blood flow to the lungs.
Dysphagia	Difficulty swallowing.
Echocardiogram	This test is used to look at how the blood flows through the heart chambers, heart valves and blood vessels. It can find a source of clots in your heart that may have traveled from your heart to your brain and caused a stroke.
Edema	Swelling under the skin due to a build up of fluid.
Electroencephalogram (EEG)	Measures and records the electrical activity of the brain. Changes from the normal pattern can show seizures.
Hemiplegic	A loss or decrease in movement on one side of the body.
Hypertension	High blood pressure.
Intracerebral Hemorrhage	A type of hemorrhagic stroke where the blood vessel bursts into the tissue deep inside the brain usually due to high blood pressure.
Magnetic Resonance Angiography (MRA)	A dye is used during an MRI to make blood vessels show up more clearly.
Magnetic Resonance Imaging (MRI)	A test that uses a magnetic field and radio waves to take pictures of the head. The MRI can show tissue damage of the brain from a stroke.
Modified Barium Swallow Study (MBSS)	An x-ray that shows what happens when you swallow.
Neglect	A lack of awareness of one side of the body or space surrounding it.
Orientation	Being aware of person, place, time and situation.
Orthotics	Braces or splints to help the patient move better.
Pressure ulcer	Breakdown of skin caused by pressure on a certain spot or area for a long time.
Pulmonary Embolism	A sudden blockage of a blood vessel in the lung, usually by a blood clot.
Seizure	A sudden surge of electrical activity in the brain. It usually affects how a person looks or acts. Typically a seizure lasts a short period of time.

Terms You Can Use

Sensory	Involving the sense organs (eyes, ears, nose, mouth and skin) and the nerves that relay messages.
Spasticity	Muscle tightening that occurs when a body part is moved.
Subarachnoid Hemorrhage	A type of stroke where a blood vessel on or near the surface of the brain ruptures and bleeds into the space between the brain and the skull.
Tone	Slight, continuous muscle contraction. Normal tone helps control your posture, while too much tone can limit movement.
Tracheostomy/tracheostomy tube (trach)	An opening into the windpipe that helps breathing. A tracheostomy tube is placed into the opening.
Transesophageal Echocardiogram	Shows a clearer picture of the heart because the probe is directly behind the heart. Shows detailed images of your heart and any blood clots.
Transfer	The process of moving from one surface to another.
Urinary incontinence	Not being able to control when you urinate.
Urinary retention	Not being able to fully empty your bladder when you urinate.
Visual field deficit	A loss of vision in part of the visual field in one or both eyes.

Notes

ACT FAST at the FIRST SIGN of STROKE



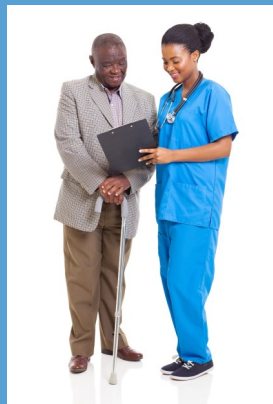
LEADING

TEACHING

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American Stroke Association
CERTIFICATION

Meets standards for

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